SF/AR

6.9.1.2

Stefanoff, Jim/SPK

From: Stefanoff, Jim/SPK
Sent: Tuesday, November 17, 1998 9:20 AM
To: 'MARYKAY VOYTILLA'; Dehner, Jay/SPK; Stefanoff, Jim/SPK; Dawson, Karen/SEA; Bunte, David/RDD; Pyle, Travis/SPK
Cc: Osterhaug, Brenda/SEA; mthomas@deq.state.id.us; rhanson@deq.state.id.us; superfund@enaila.nidlink.com; GRANDINETTI.CAMI@epamail.epa.gov; Michael.D.Mahoney@npw02.usace.army.mil; elizabeth.v.dierich@usace.army.mil; richard.e.fink@usace.army.mil
Subject: RE: Sludge Beds on CIA

Hello Mary Kay, the following are responses to each of the points of your attached e-mail regarding sludge beds on the CIA. These responses are in addition to those sent earlier by Karen Dawson.

1. **In regards to the implementability of tying the sludge beds into the CIA after the CIA cover has been placed:** The sludge beds can be constructed after the CIA cover is placed. Although the location near the middle of the CIA is best from a geotechnical subgrade perspective, citing the sludge beds near the edge (alternate location) will minimize impact on the cover because it will be at the edge, and reduce the length of CTP piping to and from the beds. However, a few things could be done during CIA closure deign and construction which would likely be incidental to the CIA closure cost but which could significantly reduce sludge bed construction cost at a latter date. These are placement and compaction of extra material over the debris to "cushion" the applied load from the beds, and slightly changing the grading plan to minimize the fill and regrading if the beds are constructed.
2. **In regards to diking off a portion of the Decant Pond to facilitate sludge bed construction:** A rough design and sketch could be put together for MK to provide a preliminary cost estimate. This would be about a 2-3 day effort for Jay Dehner. To put together something more thorough for firm bidding would require about 2-3 weeks effort for 2-3 FTEs and should include test excavations. Construction in the decant pond will likely require incorporation of rafting the sludge bed applied load on well compacted fill placed on the decant pond sediments, flexible pipe and piping design, and a long-term settlement monitoring program. These items will increase the capital and O&M costs. Interim sludge disposal capacity in the decant pond will decrease by about 1/3 (from about 6 years to 4 years). The best location would likely be to place the dike across the south end, running from east to west. This will place the beds closest to the CIA access road, facilitate piping to the CTP (the pipes could be placed in the access road) , and not interfere with the current sludge pipe.
3. In regards to the suitability of the subgrade at the "alternate location", the Corps requested that MK hoe-pack the debris to break up the larger pieces, and also to work material into the voids. Yet there are still two risks associated with construction in this area:

- A void could open up, leaving the cover and liner unsupported, or
- Differential settlement could result in one of the large pieces poking up through the liner.

However, these risks could be minimized by placing and compacting additional granular material in this area. From a sludge processing perspective this is a very good location for sludge beds because the beds would be located as close to the CTP as possible, which minimizes the piping length and reduces the chance of a pluggage, and by tucking the beds in the southeast corner the usable open space of the CIA is maximized.

-----Original Message-----
From: Stefanoff, Jim/SPK
Sent: Friday, October 30, 1998 11:18 AM
To: Dawson, Karen/SEA; Osterhaug, Brenda/SEA
Cc: Parton, Frances/SPK; Dehner, Jay/SPK
Subject: RE: CIA Sludge Drying Beds

106506

Thanks Karen. How about just north of the existing sludge pond - in the very southeast corner of the CIA? This would put the beds immediately uphill from the CTP.

-----Original Message-----
From: **Dawson, Karen/SEA**
Sent: Friday, October 30, 1998 10:51 AM
To: Stefanoff, Jim/SPK; Osterhaug, Brenda/SEA
Cc: Parton, Frances/SPK
Subject: RE: CIA Sludge Drying Beds

I'll see if I can respond to your two (?) questions.
1.) Can the drying beds be built on the old sludge ponds? Yes, but there is greater risk of differential settlement than if they were built north of the ponds or east of the ponds. If differential settlement occurs, you face the danger of eventually tearing through your liner as you clean out the sludge every other year. To compensate for the risk of differential settlement, we could make more separation between the pond and the CIA liner, or (better still) make a thicker sacrificial layer of sand on top of the drying bed liner. In other words, instead of having 4 feet of sand, and every other year scraping away the top one foot and replacing it, have maybe 6 feet of sand. Maybe we could also rig up some sort of tell-tales across the lining so that settlement could be measured. Quality control to measure the depth of sand removed and the depth of sand replaced (instead of removing to some bottom elevation) would be very important. There may be additional engineering controls in the leak detection system that would alert us to a breach of the liner.

2.) Can the drying beds be built on the new sludge pond (old mine water pond)? It is less desirable to build the drying ponds on the new sludge pond if you wait 5 or 6 years until the pond is filled up with 10± feet of new sludge than to build them on the old sludge ponds. The new sludge will be more compressible than the old sludge that has sat for several years and been loaded by the fill that MK has placed so far. If you could build the drying beds now (before the new sludge depth gets too large) in a portion of the mine water pond, it would be better than building them over the old sludge ponds, but worse than building them to the north or east of the ponds (because the mine water sediments are still more compressible than the tailings).

-----Original Message-----
From: **MARYKAY VOYTILLA [SMTP:VOYTILLA.MARYKAY@epamail.epa.gov]**
Sent: Tuesday, November 03, 1998 12:08 PM
To: fparton@ch2m.com; jdehner@ch2m.com; jstefano@ch2m.com; kdawson@ch2m.com
Cc: bosterha@ch2m.com; mthomas@deq.state.id.us; rhanson@deq.state.id.us; superfund@enaila.nidlink.com; GRANDINETTI.CAM@epamail.epa.gov; Michael.D.Mahoney@npw02.usace.army.mil; elizabeth.v.dierich@usace.army.mil; richard.e.fink@usace.army.mil
Subject: Sludge Beds on CIA

Mike Mahoney - Please pass this on to Ed Moreen and Pat with MK.

The purpose of this message is to recap what was discussed this morning on the CIA call regarding potentially placing sludge beds on the CIA. Follow up items are underlined.

1. A general concern was expressed about

not wanting to feel that we have to cite the sludge beds "now" to align with the CIA closure and design process when we haven't yet made a determination to go forward with this particular option (using sludge beds) for long-term sludge management. Brenda noted that given the small size of the proposed sludge beds (about 2 acres) we should be able to accommodate placing them even after the CIA is covered (i.e., it is possible to tie the drying beds into the cap later). Jim, Jay, Frances, and Karen, I would be interested in hearing if any of you disagree.

2. A preference was expressed for citing the sludge drying beds within the footprint of the decant pond over the "alternate location." Bill Hudson mentioned that he had reviewed some information that indicated that Gulf placed a heavy duty subbase beneath the decant pond. Jim, can you follow up with Bill on this and get to the Hill designers any information that Bill can provide?

Also, conference call participants were interested in hearing any results from the decant pond settlement tests (i.e., do the results of the settlement test support citing a drying bed in the decant pond?). Karen, can you provide info on settlement tests?

The idea of diking-off a portion of the decant pond to limit further sludge placement was also discussed. Jim, could you, Jay and appropriate others investigate this further and give us a sense of what it would take to put together a rough design for a dike across the decant pond? If a draft design could be put together, we may be able to get MK to put together a rough bid to give us an estimate of what it might cost to build such a dike. After January, when we have a better idea of which option for sludge management we will pursue, we could then construct such a dike if warranted. Brenda reminded us that some time this winter, we may need to use the decant pond as a contingency disposal area for CIA surface water.

3. Regarding the "alternate location" (in the SE corner of the CIA), this location was favored over the original suggested area to the north of the decant pond. However, conference call participants noted concerns regarding the amount of debris disposed in this area (SE corner of the CIA). Jim, I'm not sure what

further geotechnical evaluations of the "alternate location" you and your group can provide - please advise.

P.S. To the conference call participants, if I've misstated anything please comment/correct.

Mary Kay Voytilla